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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

JUNTIMA, NITTAYA

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/757,732

Applicant(s)

HYUN ET AL.

Examiner

Nittaya Juntima

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 11-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-10, 15 and 23-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to the amendment filed on 4/11/2005.
2. The objections to the specification is withdrawn in view of applicant's amendment.
3. Claims 6 and 11-18 have been cancelled, and claim 19-22 have been withdrawn.
4. Claims 1-5, 7-10, 23-32 are rejected under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 7-8, 23, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukherjee et al. ("Mukherjee") (PAPN US 2003/0119500) in view of "Newton's Telecom Dictionary" by Harry Newton.

Regarding claims 1 and 23, as shown in Fig. 2, Mukherjee teaches a system comprising:

a local area network (LAN 110, paragraph 0010);

a plurality of scalable wireless base stations (base station reads on BTSs 140 and Gateways 142, collectively, paragraphs 0010 and 0011, and since Fig. 4 shows Home and Visitor networks 100a and 100b, therefore, a plurality of base stations must be connected to LAN 110) coupled to the LAN, the wireless base stations coupled to communicate with wireless devices

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(mobile terminals 120, paragraph 0012) coupled within the enterprise wireless communication system via an internet protocol (IP, paragraph 0011);

a public switched data network gateway (router 170, paragraph 0011) for communication with a PSDN (Internet 175, paragraph 0011) directly coupled to the LAN to communicate with the wireless devices through at least one of the wireless base stations;

a public switched telephone network gateway (Public gateway 150, paragraph 0011) for communication with a PSTN (PSTN 160, paragraph 0011) directly coupled to the LAN to communicate with the wireless devices through at least one of the wireless base stations; a public land mobile network gateway (Public gateway 150, paragraph 0011) for communication with a PLMN (PLMN 160, paragraph 0011) directly coupled to the LAN to communicate with the wireless devices through at least one of the wireless base stations.

However, Mukherjee fails to teach that the PSDN, the PSTN, and the PLMN gateways each comprising a T1 trunk interface for communication with the PSDN, the PSTN, and the PLMN, respectively.

Newton teaches that a T1 is a standard for digital transmission in the U.S., used for connecting networks. In addition, bridges and routers are used to connect LANs over T1 networks. See page 1098.

Given the teaching of Newton, it would have been obvious to one skilled in the art at the time the invention was made to modify the teaching of Mukherjee to include that the PSDN, the PSTN, and the PLMN gateways each comprising a T1 trunk interface for communication with the PSDN, the PSTN, and the PLMN, respectively, as recited in the claim. The suggestion/motivation to do so would have been to utilize a T1 which is a standard for digital

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transmission in the U.S. to connect between different networks, e.g. between LAN and PSDN, PSTN, and PLMN, using routers, e.g. gateways, as taught by Newton (page 1098).

Regarding claims 7-8 and 28-29, although Mukherjee teaches that the PSTN gateway (150 in Fig. 2) is connected to the PSTN (160) and the PSDN gateway (170) is connected to the PSDN (175), Mukherjee does not explicitly teach that the PSTN and the PSDN gateways each includes a plurality of T1 trunks.

Newton teaches that T1 is a standard for digital transmission in the U.S., and T1 lines are used for connecting networks. In addition, bridges and routers are used to connect LANs over T1 networks. See page 1098.

Given the teaching of Newton, it would have been obvious to one skilled in the art at the time the invention was made to modify the teaching of Mukherjee to include that the PSTN and the PSDN gateways each includes a plurality of T1 trunks as recited in the claims. The suggestion/motivation to do so would have been to utilize T1 lines to connect between different networks, e.g. between LAN and PSDN and PSTN, using routers, e.g. gateways, as taught by Newton (page 1098).

7. Claims 2-5, 24-27, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukherjee et al. ("Mukherjee") (PAPN US 2003/0119500) in view of "Newton's Telecom Dictionary" by Harry Newton, and further in view of Thorson et al. ("Thornson") (PAPN US 2002/0123365).

The combined teaching of Mukherjee and Newton teaches substantially all the claimed modified invention as specified above, however, does not teach expressly wherein the scalable wireless base stations each include stackable base modules each operable to support

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communication with mobile terminals in a respective sectorized coverage area, wherein the stackable wireless base modules each include a transceiver coupled to receive and transmit coded communication signals to and from a remote terminal coupled to the system, wherein the stackable base modules further include a plurality of channel elements coupled to enable the base stations to handle digital communication signals to and from mobile terminals remotely coupled to the base station, and wherein the stackable base modules further include an Ethernet interface card coupled to enable the stackable base modules to handle internet protocol communication signals.

Thorson teaches wherein the scalable wireless base stations each include stackable base modules (BTS appliance) each operable to support communication with mobile terminals in a respective sectorized coverage area (paragraphs 0086-0087), wherein the stackable wireless base modules each include a transceiver (RF transceiver) coupled to receive and transmit coded communication signals (CDMA applications) to and from a remote terminal coupled to the system (paragraphs 0086-0088), wherein the stackable base modules further include a plurality of channel elements (channel elements) coupled to enable the base stations to handle digital communication signals to and from mobile terminals remotely coupled to the base station (paragraph 0086), and wherein the stackable base modules further include an Ethernet interface card (backhaul network interfaces) coupled to enable the stackable base modules to handle internet protocol communication signals (paragraphs 0086-0087, where a backhaul interface module supports distribution and routing of packets from the network to co-located BTS appliances).

Therefore, a person of ordinary skill in the art would have been motivated to employ

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Thorson in the combined teaching of Mukherjee and Newton in order to obtain a scalable base station having stackable base modules operable to support communication with mobile terminals in a respective sectorized coverage area, where the base modules have a transceiver, a plurality of channel elements, and an Ethernet interface card. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Thorson with the combined teaching of Mukherjee and Newton in order to obtain the invention as specified in claims 2-5 and 24-27. The suggestion/motivation to do so would have been to use connectable BTS appliances (having a transceiver, a plurality of channel elements, and an Ethernet card) in base stations so that flexible sectorization and capacity expansion can be realized as taught by Thorson (paragraph 0086).

Claim 32 is a system claim containing similar limitations as recited in claims 2-5, and is therefore, rejection under the same reason set forth in the rejection of claims 2-5.

8. Claims 9-10 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukherjee et al. ("Mukherjee") (PAPN US 2003/0119500) in view of "Newton's Telecom Dictionary" by Harry Newton, and further in view of Jaisingh et al. ("Jaisingh") (USPN 5,600,633).

The combined teaching of Mukherjee and Newton teaches substantially all the claimed modified invention as specified above, however, does not teach expressly a plurality of combiners coupled to interconnect the plurality of base stations to handle communication requests from remote mobile terminals to the system and further including a plurality of splitters

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coupled to interconnect the plurality of base stations to handle communications requests from the base stations to remote terminals coupled to the system.

As shown in Fig. 4, Jaisingh teaches radio systems that are interconnected through a combiner and splitter to handle communication requests (services provided to subscribers must also include call setup requests, col. 2, ll 56-65) to and from a wireless subscriber (Figure 4, and col. 2, ll 54-67, where the radio systems alternately share an antenna through the use of a combiner and splitter and duplexer).

Given the teaching of Jaisingh, it would have been obvious to one skilled in the art to employ Jaisingh in the combined teaching of Mukherjee and Newton to include a plurality of combiners coupled to interconnect the plurality of base stations to handle communication requests from remote mobile terminals to the system and further including a plurality of splitters coupled to interconnect the plurality of base stations to handle communications requests from the base stations to remote terminals coupled to the system as recited in the claims. The suggestion/motivation to do so would have been to enable a plurality of radio systems, e.g. base stations, to share an antenna using combiner/splitter arrangement (col. 2, ll 38-40 and 65-67).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nittaya Juntima whose telephone number is 571-272-3120. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the

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organization where this application or proceeding is assigned is 703-872-9306 (571-273-8300, effective 7/15/2005).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nittaya Juntima
July 18, 2005

NJ



RICKY NGO
PRIMARY EXAMINER

7/18/05